Name:

at1113exam: Expand, factor, and solve quadratics (v333)

1. Solve the equation.
$$(7x + 5)(9x + 4) = 0$$

$$x = \frac{-5}{7} \qquad x = \frac{-4}{9}$$

2. Expand the following expression into standard form.
$$(7x + 2)(3x + 5)$$

$$21x^2 + 35x + 6x + 10$$
$$21x^2 + 41x + 10$$

3. Expand the following expression into standard form.
$$(9x + 7)(9x - 7)$$

$$81x^2 - 63x + 63x - 49$$
$$81x^2 - 49$$

4. Expand the following expression into standard form.
$$(3x - 5)^2$$

$$9x^2 - 15x - 15x + 25$$
$$9x^2 - 30x + 25$$

5. Solve the equation with factoring by grouping.

$$15x^2 + 18x + 10x + 12 \;=\; 0$$

$$(3x + 2)(5x + 6) = 0$$
$$x = \frac{-2}{3} \qquad x = \frac{-6}{5}$$

6. Solve the equation.

$$9x^2 + 24x - 29 \;=\; 4x^2 - 2x - 5$$

$$5x^2 + 26x - 24 = 0$$
$$(5x - 4)(x + 6) = 0$$
$$x = \frac{4}{5} \qquad x = -6$$

7. Factor the expression.

$$x^2 - 10x + 24$$

$$(x - 6)(x - 4)$$

8. Factor the expression.

$$64x^2 - 49$$

$$(8x - 7)(8x + 7)$$